

The following is a complete listing of all claims in the application, with an indication of the status of each:

Listing of claims:

- 1 1 (Original) A method of resource allocation to yield a benefit comprising the
2 steps of:
3 associating each customer's demand with a benefit gained; and
4 finding a time-varying resource allocation that would yield a benefit.

- 1 2 (Original). The method of resource allocation as recited in claim 1, further
2 comprising the steps of:
3 discounting future benefits; and
4 finding optimal allocations of resources from current time through current
5 time plus lookahead based on discounted benefit and forecast demand,
6 wherein the step of discounting future benefits is based on a future discounting
7 algorithm.

- 1 3 (Original). The method of resource allocation recited in claim 2, wherein the
2 future discounting algorithm is based on a policy which, when faced with a choice
3 between a guaranteed benefit immediately and a potential benefit in the future, a
4 decision is made by comparing the guaranteed benefit value with a discounted
5 value of the potential future benefit.

- 1 4 (Original). The method of resource allocation recited in claim 2, wherein the
2 future discounting algorithm is a deterministic algorithm that achieves a
3 competitive ratio of $(1 + 1/L) (L + 1)^{1/L}$, where L is a lookahead factor which
4 models some amount of future demand known to a provider of the resource.

- 1 5 (Original) The method of resource allocation recited in claim 2, wherein the
2 algorithm is an intermittent reset algorithm that achieves a competitive ratio of $1 +$
3 $4/(L-7)$, where L is a lookahead factor which models some amount of future

4 demand known to a provider of the resource.

1 6 (Original) The method of resource allocation as recited in claim 1, wherein
2 resource allocation is done to maximize a benefit.

1 7 (Original). The method of resource allocation as recited in claim 1, wherein the
2 benefit is a tangible benefit.

1 8 (Original). The method of resource allocation as recited in claim 7, wherein the
2 tangible benefit is a profit and resource allocation is done to maximize the profit.

1 9 (Original) The method of resource allocation as recited in claim 1, wherein the
2 benefit is an intangible benefit.

1 10 (Original) The method of resource allocation as recited in claim 9, wherein the
2 intangible benefit is customer satisfaction and resource allocation is done to
3 maximize customer satisfaction.

1 11 (Original) The method of resource allocation as recited in claim 1, wherein the
2 resource is computer cycles and resource allocation is done to more efficiently
3 solve computationally intensive problems.

1 12 (Original) A method of resource allocation to yield a benefit comprising the
2 steps of:

3 modeling the resource allocation problem mathematically;
4 in the model, dividing time into intervals of fixed length based on the
5 assumption that demand is uniformly spread throughout each such interval; and
6 associating each customer's demand with a benefit gained and finding a
7 time-varying resource allocation that would maximize benefit gained.

1 13 (Original) The method of resource allocation as recited in claim 12, further
2 comprising the steps of:

3 discounting future benefits; and
4 finding optimal allocations of resources from current time through current
5 time plus lookahead based on discounted benefit and forecast demand, wherein the
6 step of discounting future benefits is based on a future discounting algorithm.

1 14 (Original) The method of resource allocation recited in claim 13, wherein the
2 future discounting algorithm is based on a policy which, when faced with a choice
3 between a guaranteed benefit immediately and a potential benefit in the future, a
4 decision is made by comparing the guaranteed benefit value with a discounted
5 value of the potential future benefit.

1 15 (Original) The method of resource allocation recited in claim 13, wherein the
2 future discounting algorithm is a deterministic algorithm that achieves a
3 competitive ratio of $(1 + 1/L) (L + 1)^{1/L}$, where L is a lookahead factor which
4 models some amount of future demand known to a provider of the resource.

1 16 (Original) The method of resource allocation recited in claim 12, wherein the
2 algorithm is an intermittent reset algorithm that achieves a competitive ratio of $1 +$
3 $4/(L-7)$, where L is a lookahead factor which models some amount of future
4 demand known to a provider of the resource.

1 17 (Original) The method of resource allocation as recited in claim 12, wherein
2 the benefit is a tangible benefit.

1 18 (Original). The method of resource allocation as recited in claim 17, wherein
2 the tangible benefit is a profit and resource allocation is done to maximize the
3 profit.

1 19 (Original) The method of resource allocation as recited in claim 12, wherein
2 the benefit is an intangible benefit.

1 20 (Original) The method of resource allocation as recited in claim 19, wherein

2 the intangible benefit is customer satisfaction and resource allocation is done to
3 maximize customer satisfaction.

1 21 (Original) The method of resource allocation as recited in claim 12, wherein
2 the resource is computer cycles and resource allocation is done to more efficiently
solve computationally intensive problems.

1 22. (Original) A method for server allocation in a Web server “farm” based on
2 limited information regarding future loads to achieve close to greatest possible
3 revenue based on an assumption that revenue is proportional to the utilization of
4 servers and differentiated by customer class comprising the steps of:
5 modeling the server allocation problem mathematically;
6 in the model, dividing time into intervals of fixed length based on the
7 assumption that each site’s demand is uniformly spread throughout each such
8 interval;
9 maintaining server allocations fixed for the duration of an interval, servers
10 being reallocated only at the beginning of an interval, and a reallocated server
11 being unavailable for the length of the interval during which it is reallocated
12 providing time to “scrub” the old site (customer data) to which the server was
13 allocated, to reboot the server and to load the new site to which the server has
14 been allocated, each server having a rate of requests it can server in a time interval
15 and customers share servers only in the sense of using the same servers at different
16 times, but do not use the same servers at the same time; and
17 associating each customer’s demand with a benefit gained by the service
18 provider in case a unit demand is satisfied and finding a time-varying server
19 allocation that would maximize benefit gained by satisfying sites’ demand.

1 23. (Original) The method for server allocation in a Web server “farm” as recited
2 in claim 22, further comprising the steps of:
3 discounting future benefits; and
4 finding optimal allocations of resources from current time through current
5 time plus lookahead based on discounted revenues and forecast demand,

6 wherein the step of discounting future benefits is based on a future discounting
7 algorithm.

1 24. (Original) The method for server allocation in a Web server “farm” as recited
2 in claim 23, wherein the future discounting algorithm is based on a policy which,
3 when faced with a choice between a guaranteed benefit immediately and a
4 potential benefit in the future, a decision is made by comparing the guaranteed
5 benefit value with a discounted value of the potential future benefit.

1 25. (Original) The method for server allocation in a Web server “farm” as recited
2 in claim 22, wherein the future discounting algorithm is a deterministic algorithm
3 that achieves a competitive ratio of $(1 + 1/L) (L + 1)^{1/L}$, where L is a lookahead
4 factor which models some amount of future demand known to a provider of the
5 resource.

1 26. (Original) The method for server allocation in a Web server “farm” as recited
2 in claim 22, wherein the algorithm is an intermittent reset algorithm that achieves
3 a competitive ratio of $1 + 4/(L-7)$, where L is a lookahead factor which models
4 some amount of future demand known to a provider of the resource.

1 27. (Original) The method for server allocation in a Web server “farm” as recited
2 in claim 23, wherein resource allocation is done to maximize profit.